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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

AKPATI, ODAICHE T

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2131

DATE MAILED: 08/12/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

APL

| | | | | |
|------------------------------|--------------------|--|---------------------|--|
| Office Action Summary | Application | | Applicant(s) | |
| | 09/901,350 | | CHAWLA ET AL. | |
| | Examiner | | Art Unit | |
| | Odaiche T Akpati | | 2131 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 10, 13-20, 23, 24, 26, 29-33, 36-39, 41-44 and 46-50 is/are rejected.
- 7) ☒ Claim(s) 2-9, 24-36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/9/01 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "110" in Fig. 1 has been used to designate both the server system and the third server site. As indicated on page 9 of the specifications, server site 110 should be 116. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: The reference number 116 on lines 10, 17 and 19 of page 9 of the application is not depicted in the drawings. Appropriate correction is required.

Claim Objections

3. Claims 2-9 and 24-36 are objected to because of the following informalities: With regards to claim 2, please see "...from the at the at least one network..." on line 10. With regards to claim 24, please see "...from the at least on web server at the least one ..." on line 20. They both contain extra words that do not belong to the sentence. Any remaining claims not specifically addressed are objected to by virtue of their dependency. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 14, 17, 20 and 23 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 17 line 1, Claim 20 line 1 and Claim 23 line 1 recite the limitation "the third secure session protocol". There is insufficient antecedent basis for this limitation in the claim. For purposes of applying art, the examiner assumes Claims 17, 20 and 23 depend on Claim 14 since the phrase "a third secure session protocol" was only introduced in Claim 14 and not in Claim 10.
6. Claims 14 and 36 state that "...storing includes encrypting the..." but the examiner asserts that storing of the content or HTTP page and encryption of the content are two mutually exclusive events and cannot be combined.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Chapter 7 of the Netscape Proxy Server Administrator's Guide.

The guide discloses a secure reverse proxy between a server and a client as depicted in Fig. 7.4. This figure shows that the proxy is caching secure content because the links connecting the proxy to both server and client carry encrypted and secure data.

It states in the "Secure Reverse Proxying" section that SSL is used. SSL is a security mechanism employed by HTTPS. A web server as defined by the Microsoft Dictionary (5th Ed.) is a server software that uses HTTP to serve up HTML documents...when requested by a client, such as a web browser. Hence, this implies that since SSL is the mechanism used in this example in the reference, then the client communicated to by the proxy could possibly be a web browser and the server, a web server.

The diagram also depicts the internet as the medium of communication. Hence, the examiner asserts that a network is involved as a medium of communication.

The examiner further concludes that the SRP caches secure content because it is implied on the third paragraph under "Secure Reverse Proxying" of Chapter 7 that the secure connection between the SRP and a client employs SSL as a caching mechanism. Since SSL allows for encryption of the content being transferred and also utilized as a "caching mechanism" then this means that caching of the secure content occurs at the SRP.

8. Claim 39 is rejected under 35 U.S.C. 102(b) as being anticipated by Chapter 7 of the Netscape Proxy Server Administrator's Guide.

Under the "Secure Reverse Proxying" section, first paragraph, it discloses that "secure reverse proxying occurs when one or more connections between a proxy server and another machine uses the Secure Sockets Layer (SSL) protocol to encrypt data." Hence, the examiner deduces that SSL is the protocol used between the proxy server, client and the remote server.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 21, 22, 24, 25, 26, 27, 28, 29, 34, 35, 41, 42, 45, 46, 47, 48, 49, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Netscape Proxy Server Administrator's Guide Chapter 9 in view of Chapter 7.

9. With respect to Claim 2, the specification does not provide any specific definitions for a network appliance, a web browser and a web server so the examiner gives it its broadest, most reasonable interpretation. The examiner defines a network appliance as a device that interacts with other modules in a network. The examiner defines a web browser as a client that requests and receives web pages. The examiner defines a web server as a module that stores and forwards web pages.

The first paragraph of Claim 2 is met by the limitations set out in Claim 1, and is already discussed above for Claim 1. However, the secure reverse proxy described in Claim 1 is substituted by the broader term “network appliance” in claim 2. Hence, an SRP could be a network appliance, since it interacts with other modules in the network.

Chapter 9 talks about a proxy server having a cache such that when requests are made to the remote server by the client for a document that was previously requested and copied into the proxy cache, the proxy returns the document from the cache to the client. (Guide, Chapter 9, “How Caching Works” section, third paragraph). This is also depicted in Figure 9.1. This is relevant to the entire basic functions described in Claim 2.

However, Chapter 9 does not teach that the communication between the proxy and the server and client is secure or that the data sent is encrypted. However, Chapter 7 covers the limitation of “establishing a secure session between the at least one network appliance and the at least one web browser, wherein the at least one web browser sends an encrypted request for content using a secure session protocol.” Chapter 7 teaches that the communication between client and proxy server (whereby the communication can be either a request for content or the requested content itself being transmitted to the client) is one that is secure and it that the data sent is encrypted as depicted in Figure 7.4.

“Decrypting the encrypted request for content at the at least one network appliance” is covered by the following. When the encrypted request is received by the SRP from the web browser, the SRP will not be able to make any sense of it unless it decrypts the message. Therefore, the only possible and next obvious step is decryption of the encrypted request by the SRP.

“Examining at least one network appliance’s local cache to locate the content” is covered by the following. If the SRP is to return the requested content from its cache (Guide, Chapter 9, “How Caching Works” section, third paragraph), then it would be a necessary step to examine its local cache to locate that document. Hence this is an obvious step in the claimed invention.

“Encrypting the content from the at least one network appliance’s local cache using an established secure protocol” and “sending the content to the at least web browser” is covered by the following. Figure 9.1 depicts the requested document being sent from the cache to the client. Figure 9.1 however does not however show the document being encrypted before it is sent to the client. However, in light of Chapter seven’s Fig. 7.4., for the data to remain secure, encryption of the content is a necessary step before it is transmitted to the client.

It would have been obvious to one of ordinary skill in the art to combine the teachings of Chapter 9 to the teachings of Chapter 7 because caching as taught by Chapter 9, first paragraph, reduces network traffic and offers faster response time for clients. Hence, if secure data can be cached at the secure reverse proxy, time will be saved and network bandwidth will be improved.

10. With respect to Claims 3, 13, Chapter 9 talks about the content being copied to the proxy cache in Chapter 9, fourth paragraph. The cache is further described under the “Understanding the Cache Structure” of Chapter 9, first paragraph as consisting of partitions, which is a storage area located on a disk. These disk partitions as defined by

the Microsoft Dictionary, 5th Edition, are logical compartments on a physical disk drive. Hence, this storage media is non-volatile because when power is removed from a physical disk drive, it retains the information stored on it. It would be obvious to one of ordinary skill in the art to have a non-volatile memory because it is a common form of permanent storage.

11. With respect to Claim 4, in light of Claim 2, it would have been obvious to one of ordinary skill in the art at the time the invention was made to collocate the network appliance to the web server because it would be easier for an administrator to maintain and update both servers
12. With respect to Claims 5, 29, Chapter 9 further discusses on the third paragraph about the client requesting a web page, which the examiner interprets as an HTTP page, from the proxy server. Motivation to have a web page being retrieved as opposed to other forms of data is further discussed in Chapter 9. The "Caching HTTP Documents" section, second paragraph, teaches that HTTP documents offer caching features that documents of the other protocols do not. It says that the descriptive header section is used to determine if the HTTP document is up to date or not, so that if it isn't it can be refreshed by the remote server. This feature of up-to-date checking for HTTP documents saves bandwidth and decreases latency. Hence, it would be obvious to one of ordinary skill in the art to retrieve an HTTP page as opposed to other forms of data because of this.

13. With respect to Claim 6, in Chapter 7 of the Guide, fourth paragraph, when the client makes a request, it goes to the proxy server. The proxy server then sends the request through the firewall to the content server. The content server passes the content to the proxy server. Then the proxy sends the retrieved information to the client. Figure 7.4 also depicts an embodiment of the communication between the proxy server and the remote server, whereby the connection is secure. The fourth paragraph of Chapter 7 of the Guide does not explicitly say that the retrieved information is stored at the network appliance for future requests, neither does it explicitly say that the proxy server determines the content requested is not present in its local cache. However in Chapter 9, fourth paragraph, it says that when a client requests a document that was previously requested and copies it into the proxy cache, the proxy returns the document from the cache instead of retrieving the document from the remote server again. Hence, the examiner asserts that in order to repetitively retrieve the document from the cache, it must have been stored in the cache. Hence, storage of the content at the proxy server is an obvious step taken. Likewise, it is also an obvious step for the proxy server to check its local cache first for the requested content before contacting the server. It would be obvious to one of ordinary skill in the art to assume the above functions.
14. With respect to Claim 9, 21, 22, 34, 35, 45, IPSec is a common, well-known security protocol that ensures security at the IP layer. It would therefore have been obvious to one

of ordinary skill in the art at the time of the invention to employ IPSec as the security protocol of choice.

15. With respect to Claim 10, the limitation of Claim 10 is similar to the limitation of Claim 2 except for the fact that in Claim 10 a second secure session is involved now and the content requested is specifically an HTTP page. The second session involves the SRP contacting and transacting with the remote web server when the requested HTTP page is unavailable at the SRP's local cache. Also, Claim 10 is similar to Claim 1 with respect to the first paragraph whereby the proxy server is more specifically an SRP. Chapter 9 discusses on the third paragraph that when a client requests a web page or an HTTP page, from the proxy server, the proxy server copies the document from the remote server to its cache directory structure while sending the document to the client. Also please see Fig. 9.1 for a depiction of this. Please take note that a web page being requested by the client covers the limitation of an HTTP page being requested. Chapter 7 also depicts in Fig. 7.4 a secure and encrypted connection between remote server, proxy and client. Therefore these two references can be combined to deduce that there are two secure sessions involved in this interaction. It is implicit within both combined references that when the client requests a web page from the proxy server, the request is encrypted before it is sent to the proxy server because the link is secure. The proxy server cannot make sense of this encrypted message and thus must decrypt the request and then check to see if it contains this requested web page. If the requested HTTP page

is out-of-date (Fig. 9.1, Chapter 9) or not present in the proxy cache, a second session has to be established between the proxy server and the remote server for a request to be encrypted and sent to the remote server (Figure 9.1, Chapter 9). Upon receipt of the encrypted request by the remote server, the request has to be decrypted, read and the requested web page retrieved from its local cache directory, encrypted and sent to the proxy server using the pre-established second session (Figure 7.4, Chapter 7). The proxy server has to now decrypt the web page, copy it so that it can store it, and then encrypt the web page and send it to the client using the first pre-established secure session (Fig. 7.4, Chapter 7).

Hence, since all these steps can be deduced from Chapter 9 and Chapter 7 references, it will therefore be obvious to one of ordinary skill in the art to come up with these assumptions.

16. With respect to Claims 11 and 27, in light of Claims 10 and 24 rejection respectively, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a dedicated line as a channel between the SRP and web server so as to permanently connect two or more locations to the internet.
17. With respect to Claims 12 and 28, in light of Claims 10 and 24 respectively, it would be obvious to one of ordinary skill in the art at the time the invention was made to collocate the SRP to the web server because it would be easier for an administrator to maintain and update both servers.

18. With respect to Claim 24, Claim 24 is similar to Claim 10 but the major differences are the following. In Claim 24, there is no mention of HTTP pages being requested/transferred. Also, Claim 24 does not talk about the scenario whereby the requested content is initially retrieved from the SRP during the first session. Claim 24 also discloses retrieval of content from the SRP upon subsequent requests for content by the client, after the content is saved to the SRP.

Chapter 9 talks about future requests by the client being accessed from the SRP in paragraph four. It says that “when a client requests a document that was previously requested and copied into the proxy cache, the proxy returns the document from the cache instead of retrieving the document from the remote server again. The examiner therefore asserts that future requests from the client for the copied content will be accessed from the proxy server.
19. With respect to Claim 25, the limitation “storing includes encrypting the content using a third secure session protocol, wherein the third secure session protocol is known only to the at least one SRP” is obvious to one of ordinary skill in the art at the time of the invention in light of Claim 24 and the fact that knowledge of the secure protocol to the SRP would preserve data integrity.
20. With respect to Claim 26, Chapter 9 talks about the content being copied to the proxy cache in Chapter 9, fourth paragraph. The cache is further described under the

“Understanding the Cache Structure” of Chapter 9, first paragraph as consisting of partitions, which is a storage area located on a disk. These disk partitions are defined by the Microsoft Dictionary, 5th Edition, are logical compartments on a physical disk drive. Hence, this storage media is non-volatile because when power is removed from a physical disk drive, it retains the information stored on it. It would be obvious to one of ordinary skill in the art to have a non-volatile memory because it is a common form of permanent storage.

21. With respect to Claim 41, the limitations disclosed in Claim 41 is similar to the limitations disclosed in Claim 24’s first, ninth and tenth paragraphs and hence is discussed in Claim 24 rejection.
22. With respect to Claim 42, its rejections have already been discussed in claim 10 rejections and can be viewed above.
23. With respect to claim 46, its rejections have already been discussed in claim 24 rejections and can be viewed above.
24. With respect to Claim 47, its limitations are contained in Claim 10 limitations and are discussed above. However, in Claim 47 the instructions are contained in a computer readable medium. It would have been obvious of one of ordinary skill in the art to put

these instructions on a computer-readable medium because this is the only way that the computer can have access to these instructions from a permanent or non-volatile storage.

25. With respect to Claim 48, its limitations are contained in Claim 10 limitations and are discussed above. However, in Claim 48 the instructions are stored in a computer readable medium. It would have been obvious of one of ordinary skill in the art to put these instructions on a computer-readable medium because this is the only way that the computer can have access to these instructions from a permanent or non-volatile storage.
26. With respect to Claim 49, its limitations are contained in Claim 10 limitations and are discussed above. However, in Claim 49 the instructions are stored in an electromagnetic medium. It would have been obvious to one of ordinary skill in the art to put these instructions an electromagnetic medium because this is a common form of permanent storage.
27. With respect to Claim 50, its limitations are contained in Claim 10 limitations and are discussed above. However, in Claim 50 the instructions are stored in an electromagnetic medium. It would have been obvious to one of ordinary skill in the art to put these instructions in an electromagnetic medium because this is a common form of permanent storage.

Claims 7, 15, 16, 17, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Netscape Proxy Server Administrator's Guide, Chapter 9 in view of Chapter 7 in further view of Bellwood (WO0103398A2).

28. With respect to Claim 7, 15, 16, 17 and 43 Bellwood discusses a secure session that uses Transport Layer Security (TLS) protocol between a client and a server. (page 5, line 11-30). The motivation to use a TLS session is discussed on page 5, line 15-16. It says that TLS sessions are "used to avoid the expensive negotiation of new security parameters for each connection." Hence it would be obvious to one of ordinary skill in the art to come up with this invention based on this motivation.

Claims 30, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Netscape Proxy Server Administrator's Guide, Chapter 9 in view of Chapter 7 in further view of Bellwood(WO0103398A2).

29. With respect to Claims 30 and 31 Bellwood discusses a secure session that uses Transport Layer Security (TLS) protocol between a client and a server. (page 5, line 11-30). The motivation to use a TLS session is discussed on page 5, line 15-16. It says that TLS sessions are "used to avoid the expensive negotiation of new security parameters for each connection." Hence it would be obvious to one of ordinary skill in the art to come up with this invention based on this motivation.

Claim 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Netscape Proxy Server Administrator's Guide, Chapter 7 in view of Bellwood(WO0103398A2).

30. With respect to Claim 38, Bellwood discusses a secure session that uses Transport Layer Security (TLS) protocol between a client and a server. (page 5, line 11-30). The motivation to use a TLS session is discussed on page 5, line 15-16. It says that TLS sessions are "used to avoid the expensive negotiation of new security parameters for each connection." Hence it would be obvious to one of ordinary skill in the art to come up with this invention based on this motivation.

Claim 8, 18, 19, 20, 32, 33 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Netscape Proxy Server Administrator's Guide, Chapter 9 in view of Chapter 7 in further view of Subramaniam et al (6,081,900).

31. With respect to Claims 8, 18, 19, 20 and 44 Subramaniam discloses that the border server is connectable to the target server by a first communications link, and the client is connected to the border server by a second communications link, such that the second link supports SSL (column3, lines 19-25). Therefore, SSL is the security mechanism of choice over the communication link between the client and border server. The examiner

asserts that this scenario of utilization of the SSL mechanism can also be applied to the first communication link. Also on column 4, lines 11-13, it states that HTTPS is used anytime the user requests confidential data. HTTPS is an application that utilizes SSL. Therefore, it would be obvious to one of ordinary skill in the art to use SSL as the security mechanism between the client and the proxy server because SSL is a widely accepted, commonly used security mechanism that efficiently serves its purpose.

32. With respect to Claims 32 and 33, Subramaniam discloses that the border server is connectable to the target server by a first communications link, and the client is connected to the border server by a second communications link, such that the second link supports SSL (column3, lines 19-25). Therefore, SSL is the security mechanism of choice over the communication link between the client and border server. The examiner asserts that this scenario of utilization of the SSL mechanism can also be applied to the first communication link. Also on column 4, lines 11-13, it states that HTTPS is used anytime the user requests confidential data. HTTPS is an application that utilizes SSL. Therefore, it would be obvious to one of ordinary skill in the art to use SSL as the security mechanism between the client and the proxy server because SSL is a widely accepted, commonly used security mechanism that efficiently serves its purpose.

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Netscape Proxy Server Administrator's Guide, Chapter 7.


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- 33) With respect to Claim 40, in light of Claim 37 rejection, IPSec is a common, well-known security protocol that ensures security at the IP layer. It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to employ IPSec as the security protocol of choice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Odaiche T Akpati whose telephone number is 703-305-7820. The examiner can normally be reached from 8.30am-6.00pm, Monday through Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached at 703-305-9648. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7240 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

August 4, 2003


AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

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